Name:_____ Date:_____

PC: Review of Linear Functions Ms. Loughran

A ***linear function*** is a function defined by the equation $f(x) = mx + b$, where "m" is called the slope and "b" is called the y-intercept. This equation is called the slope intercept form of a line. The graph of a linear equation is a straight line.

Formula for slope:

$m =$

Other ways to write the equation of a line:

Point slope:

Standard form:

Parallel lines have _____ slopes.

Perpendicular lines have slopes that are _____ _____.

Horizontal lines are in the form $y =$ _____. Slope of a horizontal line is _____.

Vertical lines are in the form $x =$ _____. Slope of a verticall line is _____.

Exercises

1. Find the slope of the line passing through each pair of points.

   (a) $(-2,0)$ and $(3,1)$ (b) $(-1,2)$ and $(2,2)$ (c) $(0,4)$ and $(1,-1)$

2. Find an equation of the line that passes through the point $(1,-2)$ and has a slope of 3 in:
   (a) point slope form
   (b) slope intercept form
   (c) standard form

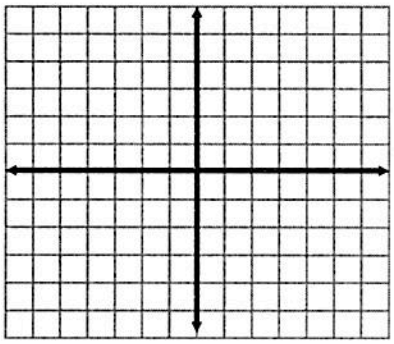
3. Find an equation of the line, in standard form, that passes through the points $(-4,0)$ and $(2,3)$.

4. State an equation of a line that contains the point whose coordinates are $(2,-3)$ and is parallel to the line whose equation is $2x+y-6=0$.

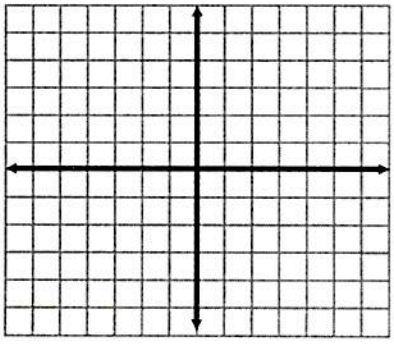
5. State an equation of a line that contains the point whose coordinates are ($(1,-2)$ and perpendicular to the line whose equation is $x+3y=6$.

6. In 2009 Nike's net sales were 19 billion, and in 2012 net sales were 24 billion.
   (a) Write a linear equation giving the net sales y in terms of the year x.
   (b) Use the equation to estimate the net sales for 2015.

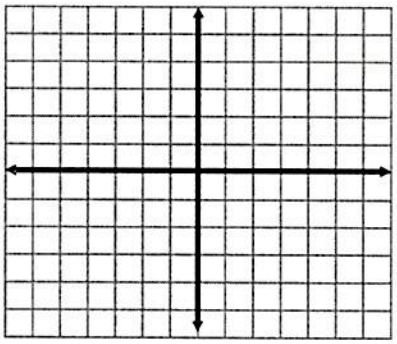
7. Graph $f(x)=\frac{3}{2}x-2$



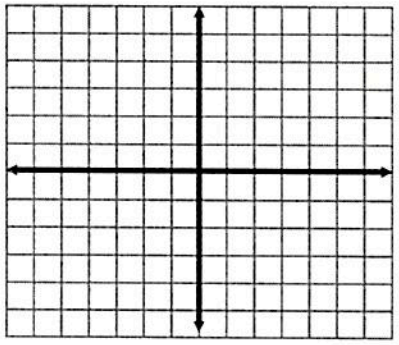
8. Graph $6x+9=-3y$



9. Graph $y = 3$



10. Graph $x = -2$

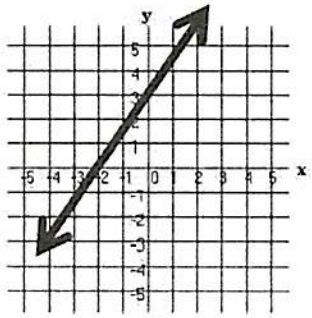


11. What is the slope of the line $y = 3$?

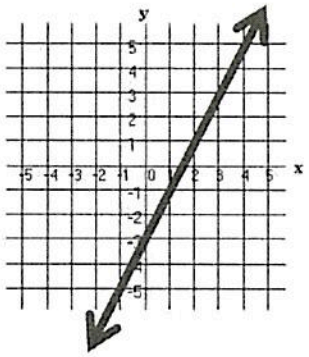
12. What is the slope of the line $x = -2$?

Write the equation of the line from graph and also write domain and range. Find x and y-intercepts. Determine whether or not each is a function.

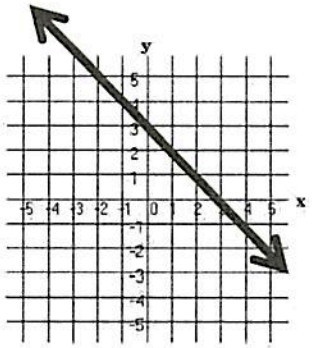
13.



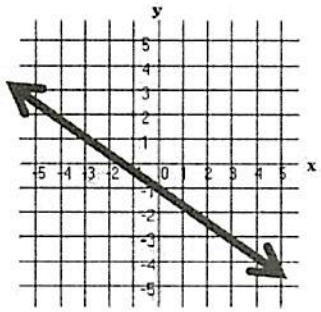
14.



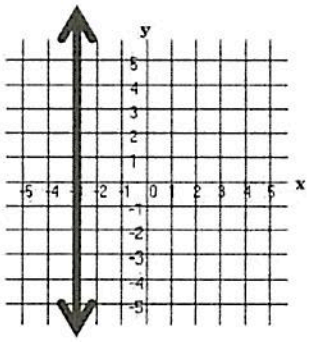
15.



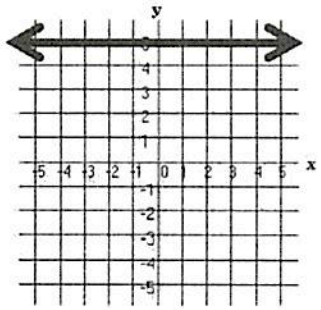
16.



17.



18.



HW: pp.34-38 #s 1,2 23, 25, 35-39 odd, 85